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10/783,710

02/21/2004

Jindong Sun

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11/20/2007

MONSANTO COMPANY

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ST. LOUIS, MO 63167

EXAMINER

KRUSE, DAVID H

ART UNIT

PAPER NUMBER

1638

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/783,710

Applicant(s)

SUN ET AL.

Examiner

David H. Kruse

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 June 2007 and 12 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 5-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Office action is in response to the Amendment and Remarks filed on 21 June 2007 and the response filed on 12 September 2007.
2. Those objections or rejections not specifically addressed in this Office action are withdrawn in view of Applicants' amendments.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 112***

4. Claim 12 remains rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is repeated for the reason of record as set forth in the last Office action mailed 21 February 2007. Applicant's arguments filed 21 June 2007 have been fully considered but they are not persuasive.

Applicants state that applicant believes this rejection has been obviated by amendment (page 2, 3<sup>rd</sup> paragraph of the Remarks). This is not found to be persuasive because the limitation "insect resistance" lacks proper antecedent basis in claim 10 that recites "pest resistance".

5. Claims 1 and 5-13 remain rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is repeated for the

Art Unit: 1638

reason of record as set forth in the last Office action mailed 21 February 2007.

Applicant's arguments filed 21 June 2007 have been fully considered but they are not persuasive.

Applicants argue that the drawing which shows that the consensus amino acid sequence of SEQ ID NO: 11 defines amino acid sequences of SEQ ID NO: 7, SEQ ID NO: 8 (which is a conserved segment of SEQ ID NO: 1), SEQ ID NO: 9 (which is a conserved segment of SEQ ID NO: 2), and SEQ ID NO: 10 (which is a conserved segment of SEQ ID NO: 3) (page 2, last paragraph of the Remarks). Applicants argue that the specification describe a common specific function at page 3 lines 20-25 as a protein having the consensus amino acid sequence of SEQ ID NO: 11 and a homologue protein from another species and parts of such proteins that function to provide the water-deficit-tolerance trait exhibited in *Arabidopsis thaliana* (page 3, 2<sup>nd</sup> paragraph of the Remarks). These arguments are not found to be persuasive. Applicants provide no evidence that SEQ ID NO: 8, 9 or 10 confers a water-deficit-tolerance trait in a transgenic plant. As stated in the previous Office action, since the asserted consensus amino acid sequence of SEQ ID NO: 11 appears to be directed to a portion of a DNA binding site, and not specifically to a consensus amino acid sequence that describes the common specific function of provide the water-deficit-tolerance trait. The Examiner notes that claims 1, 5, 6 and 9-13 do not recite any function for a recombinant DNA which expresses a transcription factor comprising the consensus amino acid sequence of SEQ ID NO: 11, hence Applicants are arguing a limitation not found in these claims. The specification at page 12 describes transforming soybean with a recombinant DNA

Art Unit: 1638

encoding SEQ ID NO: 1 which showed enhance resistance and/or tolerance to water deficit as compared to wild type, while transforming corn (at page 13) exhibited increased biomass, increased seed oil, increased yield and ability to utilize high levels of nitrogen but no evidence of providing a water-deficit-tolerance trait.

6. Claims 1 and 5-13 remain rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This rejection is repeated for the reason of record as set forth in the last Office action mailed 21 February 2007. Applicant's arguments filed 21 June 2007 have been fully considered but they are not persuasive.

Applicants argue that the drawing which shows that the consensus amino acid sequence of SEQ ID NO: 11 defines amino acid sequences of SEQ ID NO: 7, SEQ ID NO: NO: 8 (which is a conserved segment of SEQ ID NO: 1), SEQ ID NO: 9 (which is a conserved segment of SEQ ID NO: 2), and SEQ ID NO: NO: 10 (which is a conserved segment of SEQ ID NO: 3) (page 3, last paragraph of the Remarks). Applicants argue that a person of ordinary skill in the art is more than capable and enabled in the art of making a transgenic plant, more than capable and enabled in the art of conducting a water deficit screen more than capable and enabled in the art of identifying a transgenic event exhibiting water deficit tolerance (page 4, 1<sup>st</sup> paragraph of the Remarks). These arguments are not found to be persuasive. See *In re Fisher*, 166 USPQ 18, 24 (CCPA 1970) which teaches "That paragraph (35 USC § 112, first) requires that the scope of

Art Unit: 1638

the claims must bear a reasonable correlation to the scope of enablement provided by the specification to persons of ordinary skill in the art. In cases involving predictable factors, such as mechanical or electrical elements, a single embodiment provides broad enablement in the sense that, once imagined, other embodiments can be made without difficulty and their performance characteristics predicted by resort to known scientific laws. In cases involving unpredictable factors, such as most chemical reactions and physiological activity, the scope of enablement obviously varies inversely with the degree of unpredictability of the factors involved.”. Applicants provide no evidence that SEQ ID NO: 8, 9 or 10 confers a water-deficit-tolerance trait in a transgenic plant. As stated in the previous Office action, since the asserted consensus amino acid sequence of SEQ ID NO: 11 appears to be directed to a portion of a DNA binding site, and not specifically to a consensus amino acid sequence that teaches the common specific function of provide the water-deficit-tolerance trait. The Examiner notes that claims 1, 5, 6 and 9-13 do not recite any function for a recombinant DNA which expresses a transcription factor comprising the consensus amino acid sequence of SEQ ID NO: 11, hence Applicants are arguing a limitation not found in these claims. The specification at page 12 teaches transforming soybean with a recombinant DNA encoding SEQ ID NO: 1 which showed enhance resistance and/or tolerance to water deficit as compared to wild type, while transforming corn (at page 13) exhibited increased biomass, increased seed oil, increased yield and ability to utilize high levels of nitrogen but no evidence of providing a water-deficit-tolerance trait.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. § 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. § 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. § 102(e)).

8. Claims 1-9 are rejected under 35 U.S.C. § 102(e) as being anticipated by Jiang (U.S. Patent 6,717,034 B2, filed 30 March 2001).

Jiang discloses a method of inserting into the genome of a plant a recombinant DNA which expresses a transcription factor having consensus amino acid sequence of SEQ ID NO: 11 at claim 5. Jiang discloses a transgenic plant produced therefrom at claim 1, a transgenic seed for growing a transgenic plant and a method of making a hybrid plant by crossing a transgenic plant with another plant at column 27, lines 22-24. Jiang discloses said transgenic seed and plant having herbicide resistance at column 22, lines 32-38. The trait of water deficit tolerance appears to be inherent in the

Art Unit: 1638

disclosed recombinant DNA disclosed by Jiang. Hence, Jiang had previously disclosed all of the claim limitations.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 10-13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jiang (U.S. Patent 6,717,034 B2, filed 30 March 2001) in view of Barry *et al* (U.S. Patent 5,633,435)

The teachings of Jiang is outlined above.

Jiang does not teach hybrid corn seed produced by crossing a transgenic female corn plant, which expresses a transcription factor with a transgenic male ancestor corn plant having a recombinant DNA, which confers at least an herbicide resistance trait.

Barry *et al* teach a transgenic corn plant having a recombinant DNA, which confers glyphosate herbicide resistance trait at claim 31, and seed of said transgenic corn plant at claim 80.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the teachings of Jiang and the teachings of Barry *et al* in a method of making a hybrid corn seed to produce the claimed hybrid corn seed. The method steps used to make the claimed product would have been obvious to one of ordinary skill in the instant art at the time of Applicants' invention. Applicants



Art Unit: 1638

state that many transgenic crop plants have recombinant DNA that confers herbicide and/or pest resistance traits (page 2, lines 8-9 of the specification). Given that the two parental transgenic corn lines were taught in the art, one skilled in the art would have had a reasonable expectation of success in making the claimed hybrid corn seed.

***Conclusion***

11. No claims are allowed.
12. This Office action is non-final because of the new grounds of rejection.
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David H. Kruse, Ph.D. whose telephone number is (571) 272-0799. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached at (571) 272-0975. The central FAX number for official correspondence is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (571) 272-1600.

**DAVID H. KRUSE, PH.D.  
PRIMARY EXAMINER**



David H. Kruse, Ph.D.  
15 November 2007

Art Unit: 1638

14. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.